647510 **MSC2CIcC101x** **Seat No :_____**

M.Sc.(Chem.) Semester - 2 (*CBCS*) Examination
March/April – 2024 (As Per Syllabus Year-2018)
Inorganic Chemistry (CORE)

Time: 02:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1 (A)	**Answer the following**	**(04)**
(1)	Explain Diamagnetism in detail.	
Q.1 (B)	**Answer any two questions out of three.**	**(10)**
(1)	Derive the Russell-Saunders Terms or LS coupling	
(2)	Explain the Magnetic Susceptibility measurement by Faraday's Method and NMR Method with it's advantage and disadvantage.	
(3)	Deduce Van Vleck Formula for Susceptibility	
Q.2 (A)	**Answer the following.**	**(04)**
(1)	Give the types of Bonding in Organometallic Compounds. Explain Nature of Metal-Carbon Bonding.	
Q.2 (B)	**Answer any two questions out of three.**	**(10)**
(1)	Give the preparation and reaction of Metal Carbonyl.	
(2)	Explain the metal complexes having pi or extended pi system ligands.	
(3)	Discuss olefin metathesis in OMC	
Q.3 (A)	**Answer the following.**	**(04)**
(1)	Discuss the metalloenzymes and it's function in living organisms.	
Q.3 (B)	**Answer any two questions out of three.**	**(10)**
(1)	Write a Short Note on Toxicity and Toxic Effect of Some Metal in Biological system.	
(2)	Discuss the Detoxification and Chelating Agents in Medicine.	
(3)	What is Metalloporphyrin? Discuss its Importance and Characterisation.	
Q.4 (A)	**Answer the following.**	**(04)**
(1)	What is Inorganic Polymers? Give its Definition and General Characteristics.	
Q.4 (B)	**Answer any two questions out of three.**	**(10)**
(1)	Discuss the Preparation of Borazine and it's derivtives.	
(2)	Discuss the Classification of Silicones.	
(3)	Briefely explain Silicates Containing Three Dimensional Network	
Q.5 (A)	**Answer the following**	**(04)**
(1)	Discuss the cause of interest in nanomaterials.	
Q.5 (B)	**Answer any two questions out of three.**	**(10)**
(1)	Explain optoelectronic properties of inorganic nanomaterials.	
(2)	Discuss the Synthesis of inorganic nanomaterials in Radiation Based Method.	
(3)	Discuss any two characterization techniques of nanomaterials.	

****